Midel Photonics

ALL-REFLECTIVE
Multispot Splitters
based on micro-structured mirrors

Our Multispot Splitters are designed to divide a single laser beam into multiple sub-beams with equal intensity, ensuring uniform energy distribution across all spots. This makes them ideal for applications requiring precise and efficient multi-spot performance, such as parallel drilling, cutting, or texturing in micromachining, uniform scribing, or welding in material processing. Optionally, the splitters can be seamlessly combined with other beam shaping optics, such as FlatTop shapers.

Multispot Solutions

Uncompromising Quality
Our Multispot Splitters deliver optimal performance, customized to your system and application needs.

- **Faster Processing Times**: Unlock the full potential of your laser's power reserves for parallelization
- **Maximum Flexibility**: Seamlessly combinable with additional beam shaping optics
- **High Uniformity**: Ensure less than 5% intensity variation across sub-beams

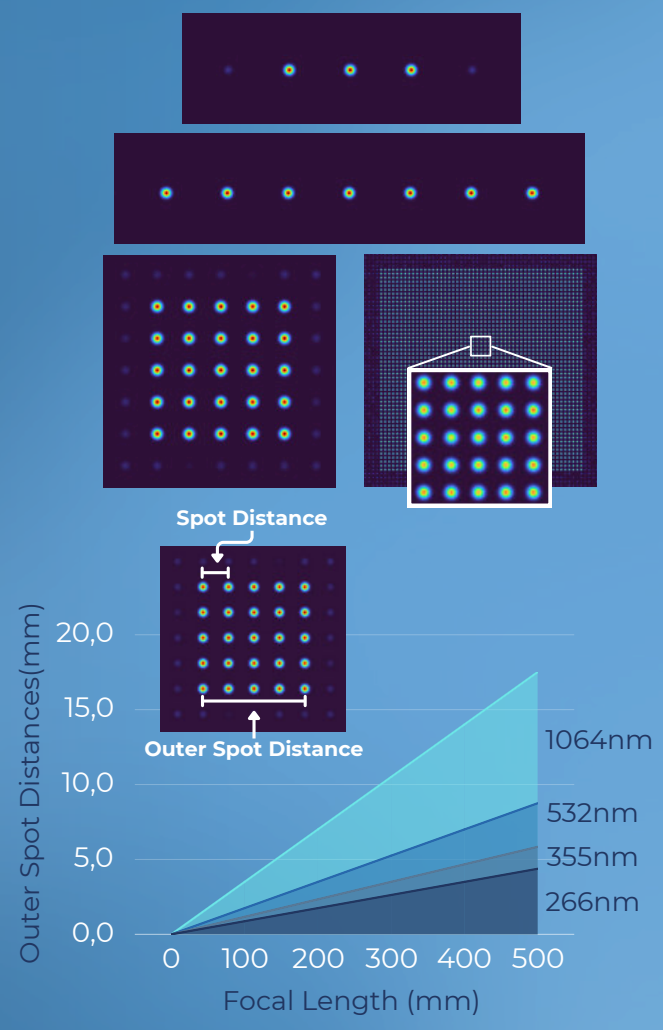
Midel Benefits

Core
System-Adapted DOE with Individual Support: The winning strategy for beam shaping in industrial context

Valuable
Superior Productivity by unmatched efficiency in shaping laser light
Fast Delivery within 3 weeks

Baseline
All Lasers, all Power Levels: Deep-UV to Near-IR, femto to continuous, low power to 50kW+

Configuration Examples



Contact us for your optimal Multispot solution. Fully customized and in your hands faster than ever!

Start NextGen Laser Processing!
Say Hi to our Team.

Call us +49 (0)228/28-679710
Write us info@midel-photonics.de
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Specifications

Spot Geometry

Patterns	Individual
Sub-Spots	Unaltered size, shape and Depth-of-Focus (DOF)
Efficiency	Typically > 80-85%, Highest-Efficiency options on request
Homogeneity	<5%
Maximal Outer Diameter	See plot on previous page

Input Beam Requirements

Input Beam	Works with single- or multi-mode
Input Beam Diameter	Up to diameter 16mm (AOI=45°)
Wavelengths	1064/1030 nm; 532/515 nm; 450 nm; 355/343 nm; 266 nm; others on request
Clear Aperture	Clear aperture ≥2x beam diameter ($1/e^2$)

Integration

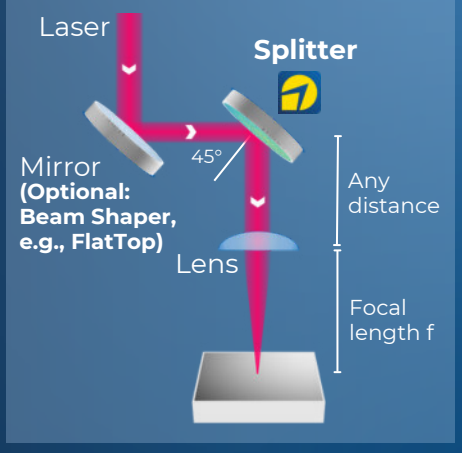
Alignment	Insensitive on lateral alignment; rotation not possible. For rotated structures, contact us.
Setup	Recommended: Integrate into collimated beam with a focusing lens (see below). For setups without a lens, contact us for analysis.

Further Specs

Material	Micro-structured dielectric HR coating on fused silica substrate
Reflectivity	>99.9% @ 1064/1032 nm; 532/515 nm; 355/343 nm; >99.8% @266 nm
Dimensions	Ø25mm/1" and Ø50mm/2". Other dimensions on request.

Configurations

Parallel / Z-Folded



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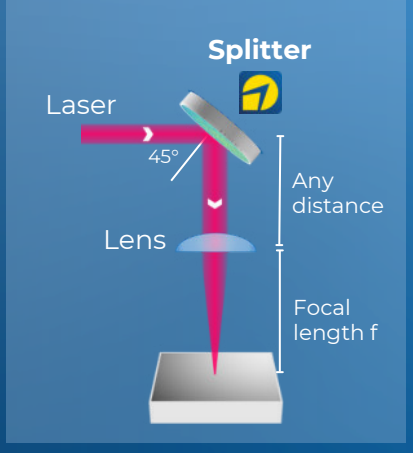
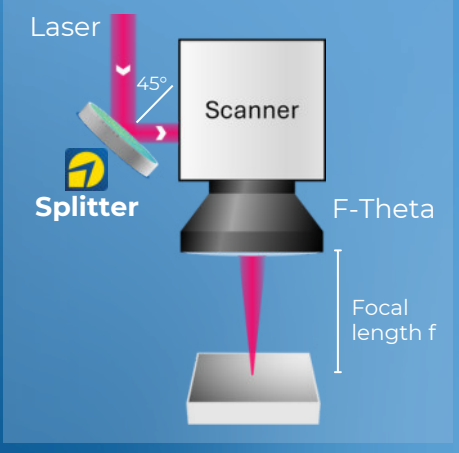


Scanner



Other configurations and angles-of-incidence (AOI) available

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Version 1.3